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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/417,832 10/14/99 HORIKIRI

T 35.C13929

005514 IM22/0815
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NEW YORK NY 10112

EXAMINER

RUTHKOSKY, M

ART UNIT

PAPER NUMBER

1745

DATE MAILED:

08/15/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/417,832

Applicant(s)

Tomonari et al.

Examiner

Ruthkosky, Mark

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1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Jun 5, 2001

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-5 is/are rejected.

7) ☒ Claim(s) 6 and 7 is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4

20) ☐ Other: _____

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DETAILED ACTION

Summary

1. Claims 1-7 are pending.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restriction

3. Applicant's election of the species of formula I in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 U.S.C. § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "high" in claim 1 is a relative term which renders the claim indefinite. The term "high ion conductivity" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claim 3, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 3, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

6. Claim 4 recites the limitation "the substituent showing capability of hydrogen bonding" in claim 3. There is insufficient antecedent basis for this limitation in the claim. The word substituent is not found. The use of the phrase "showing capability of" is not found and, further, is indefinite. Hydrogen bonding is in claim 3, however, is indefinite as written. Correction is required.

7. In claim 5, there is an improper Markush group. The word "and" should appear between the final two structures of the Markush group in order for the Markush group to be proper.

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Claim Objections

8. Claims 6 and 7 are objected to under 37 CFR 1.75© as being in improper form because these claims depend from a multiple dependent claim, (claim 5). See MPEP § 608.01(n).

Accordingly, the claims have not been further treated on the merits. The rejections for claims 1-5 below (35 U.S.C. 102 and 103) include prior art applicable to claims 6 and 7.

Claim Rejections - 35 U.S.C. § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Green et al. (WO 98/11619).

The instant claims are to a gel electrolyte containing a gelling agent and an ionically conductive material which is liquid at room temperature.

Green et al. (WO 98/11619) teaches an electrolyte which comprises a composite of a polymer and a molten salt immobilized within the polymer. The molten salts may be pyridinium or imidazolium salts (see page 2, lines 1-10.) Polymers include polyethylene oxide, polyacrylonitrile and PVDF amongst others (see page 2, lines 10-21.) These polymers are gelling

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agents which are capable of forming a polymer associated body by coordination bonding or hydrogen bonding. Functional groups, such as carbonyls, are noted in these materials. These materials are also noted in the instant specification for the same use as the instant invention (page 2). The electrolyte is used in electrochemical cells and electrochromic windows (see abstract.) Thus, the claims are anticipated.

11. Claims 1-5 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 11185836 A.

JP 11185836 A teaches an electrolyte formed with a salt and gelling agent (English abstract.) The salt is a liquid salt such as imidazolium or pyridinium salts. The gel includes a polymer materials which reads upon structure 1 of claim 5 (shown in the abstract) These polymers are gelling agents which are capable of forming a polymer associated body by coordination bonding or hydrogen bonding. Functional groups, such as carbonyls, are noted in these materials. The materials are used in photoelectrochemical cells. Thus, the claims are anticipated.

Claim Rejections - 35 U.S.C. § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al. (WO 98/11619) as applied to claims 1-4 and 6-7 above, and further in view of GB (2,212,504.)

The teachings of Green et al. (WO 98/11619) as applied to claims 1-4 and 6-7 have been presented above. Green et al. (WO 98/11619) does not teach the use of the amide-substituted cyclohexane ring as the gelling agent of the electrolyte. GB (2,212,504) teaches a solid polyacrylamide electrolyte which includes an amide-substituted cyclohexane ring as a plasticizer (or gelling agent as known in the art.) Claim 1 discloses an amide linked material which may include a cycloalkyl-group. The electrolyte salts are dissolved in the polymer materials in order to form gels (see page 5, lines 9-30). The amine is substituted, however the material is shown to dissolve the salt materials and conduct charge. It would be obvious to one skilled in the art at the time the invention was made to use a polymer material with functional groups suitable for ionic conduction such as in the invention of Green et al. (WO 98/11619) as the ionic salts are known to transfer charge across this polymer medium. It would be obvious to use the polymer materials of GB (2,212,504) in the invention of Green, as the material is shown to be used for the same purpose to dissolve a salt in a polymer material and form a gel electrolyte for an electrochemical device.

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Examiner Correspondence

14. Any inquiry regarding this communication or a previous communication should be directed to Examiner Mark Ruthkosky, Ph.D., whose telephone number is (703) 305-0587 or his supervisor, Gabrielle Brouillette, Ph.D., whose phone number is (703) 308-0756. Please note that Examiner Ruthkosky is out of the office the first Friday of each bi-week period.

The art unit 1745 unofficial fax number is 703-306-3186, while the PTO official fax number is 703-305-3599.



**CAROL CHANEY
PRIMARY EXAMINER**

8-13-01